

Development of microsatellite markers for *Puccinia psidii*, a rust fungus attacking ohia (*Metrosideros polymorpha*) and other Myrtaceae in Hawaii

Shaobin Zhong and Baojun Yang

Department of Plant and Environmental Protection Sciences, University of Hawaii at Manoa, Honolulu, Hawaii 96822, USA.

zhongs@hawaii.edu

Microsatellite or simple sequence repeat (SSR) markers are very useful for molecular population genetics studies in fungi, but no SSR markers are available for *Puccinia psidii*, a rust fungus that attacks ohia and other tree species in the Myrtaceae family. To develop SSR markers for this fungal pathogen, genomic DNA was extracted from urediospores and used to make microsatellite-enriched DNA libraries with biotinylated oligos [(TG)₁₂, (AG)₇, (GATA)₆]. Significant SSR enrichment from *P. psidii* genomic DNA was obtained using (AG)₇. No or few positive clones were recovered using (GATA)₆ or (TG)₁₂. Sequencing of 216 clones from a (AG)₇-enriched library indicated that 80 of these clones contained SSRs with repeat units larger than 8 and flanking sequences suitable for primer design. Eighty primer pairs were tested using DNA from a *P. psidii* isolate collected in Hawaii. Of these primers, 19 demonstrated clear PCR amplification. Sixteen of the 19 primer pairs exhibited polymorphism on 20 *P. psidii* isolates (12 from Hawaii, 4 Florida and 4 Brazil) analyzed. The SSR markers developed are being used to characterize population structure of *P. psidii* in Hawaii.